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ABSTRACT

The report describes the Center for Education, Diversity, & Excellence (CREDE), a national research and development center operated cooperatively by the University of California, Santa Cruz and the Department of Education's Office of Educational Research and Improvement, National Institute on the Education of At-Risk Students. CREDE's premises, mission, principles, theory, and research design are outlined, and the scope, range, and scale of its activities are noted. CREDE was established to assist the nation's diverse students at risk of educational failure to achieve academic excellence. The Center works to move issues of risk, diversity, and excellence to the forefront of discussions concerning educational research, policy, and practice. Central to its mission are issues in the education of linguistic and cultural minority students and those placed at risk by race, poverty, and geographic location. An appendix provides briefs of each of the 30 CREDE projects in six areas: language learning and academic achisvement; professional development; family, peers, schools, and community; instruction in context; integrated reform; and assessment. A second appendix lists the organizational and institutional partners in CREDE projects. Contains 42 references. (MSE)

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FROM AT-RISK TO EXCELLENCE: RESEARCH, THEORY, AND PRINCIPLES FOR PRACTICE

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Center for Research on Education, Diversity & Excellence

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RESEARCH REPORT 1

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CENTER FOR RESEARCH ON EDUCATION, DIVERSITY & EXCELLENCE

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Center for Research on Education, Diversity & Excellence (CREDE)

The Center for Research on Education, Diversity & Excellence is funded by the Office of Educational Research and Improvement of the U.S. Department of Education to assist the nation's diverse students at risk of educational failure to achieve academic excellence. The Center is operated by the University of California, Santa Cruz, through the University of California's statewide Linguistic Minority Research Project, in collaboration with a number of other institutions nationwide.

The Center is designed to move issues of risk, diversity, and excellence to the forefront of discussions concerning educational research, policy, and practice. Central to its mission, CREDE's research and development focus on critical issues in the education of linguistic and cultural minority students and students placed at risk by factors of race, poverty, and geographic location. CREDE's research program is based on a sociocultural framework that is sensitive to diverse cultures and languages, but powerful enough to identify the great commonalities that unite people.

CREDE operates 30 research projects under 6 programmatic strands:

- Research on **language learning** opportunities highlights exemplary instructional practices and programs.
- Research on **professional development** explores effective practices for teachers, paraprofessionals, and principals.
- Research on the interaction of **family, peers, school, and community** examines their influence on the education of students placed at risk.
- Research on **instruction in context** explores the embedding of teaching and learning in the experiences, knowledge, and values of the students, their families, and communities. The content areas of science and mathematics are emphasized.
- Research on **integrated school reform** identifies and documents successful initiatives.
- Research on **assessment** investigates alternative methods for evaluating the academic achievement of language minority students.

Dissemination is a key feature of Center activities. Information on Center research is published in two series of reports. *Research Reports* describe ongoing research or present the results of completed research projects. They are written primarily for researchers studying various aspects of the education of students at risk of educational failure. *Educational Practice Reports* discuss research findings and their practical application in classroom settings. They are designed primarily for teachers, administrators, and policy makers responsible for the education of students from diverse backgrounds.

Abstract

This report describes the Center for Research on Education, Diversity & Excellence (CREDE), a national research and development center operated under a cooperative agreement between the University of California, Santa Cruz, and the Office of Educational Research and Improvement (OERI), National Institute on the Education of At-Risk Students (NIEARS), of the U.S. Department of Education (USED). In the following pages, we describe the principal intellectual and organizational structures of CREDE: the premises, the mission, the principles, the theory, and the research design. We also describe the conceptual and theoretical framework of the Center; the integration of the people, projects, and programs that constitute CREDE; and the scope, range, and scale of the topics covered by CREDE's research.

CREDE's research plan provides a comprehensive framework for educational research and development that is strong, flexible, and inclusive of diversity among all individuals and communities. It is based on a theoretical framework that is sensitive to diversity of culture and language, and powerful enough to identify the great commonalties that unite people. We address educational excellence from preschool to higher education for students from all major linguistic, cultural, and ethnic groups, including those suffering all four identified risk factors for educational failure: limited English proficiency, poverty/economic disadvantage, race, and geographic location.

Introduction

This report describes the Center for Research on Education, Diversity & Excellence (CREDE), a national research and development center operated under a cooperative agreement between the University of California, Santa Cruz, and the Office of Educational Research and Improvement (OERI) of the U.S. Department of Education (USED). In the following pages, the principal intellectual and organizational structures of CREDE will be described: the premises, the mission, the principles, the theory, and the research design. We will also describe the conceptual and theoretical framework of the Center; the integration of the people, projects, and programs that constitute CREDE; and the scope, range, and scale of the topics covered by CREDE's research.

In many respects, CREDE is the successor organization to the National Center for Research on Cultural Diversity and Second Language Learning, operated under a similar cooperative agreement from 1991 to 1996. CREDE's research and development program continues the preceding center's strong role in understanding and developing effective education for English language learners and for students from cultural minorities. CREDE includes three additional risk factors in its research responsibilities—race, poverty, and geographic location.

Our work is grounded in solid research achievements, but in this field, research has outstripped development. How can our research knowledge be enacted in scaled-up, reliable programs for all students? CREDE'S research plan is designed to uncover specific resistances and barriers to enactment and to develop detailed, practical models for overcoming them.

The CREDE plan provides a comprehensive framework for educational research and development that is strong, flexible, and inclusive of diversity among all individuals and communities. It is based on a theoretical framework that is sensitive to diversity of culture and language, and powerful enough to identify the great commonalties that unite people. We address educational excellence from preschool to higher education for students from all major linguistic, cultural, and ethnic groups, including those suffering all four identified risk factors for educational failure (limited English proficiency, poverty/economic disadvantage, race, and geographic location).

CREDE research projects are organized into six programs that share results, overlap sites and subjects where feasible, and meet and communicate regularly.

1) Language Learning and Academic Achievement
2) Professional Development
3) Families/Peers/Schools and Community
4) Instruction in Context
5) Integrated Reform
6) Assessment

Each program provides a comprehensive view and definitive guidance for its topic. The projects within each program are listed in Appendix A.

We have also developed a comprehensive program of dissemination to important constituencies, using a broad range of communication media. Through powerful national partners (see Appendix B), we offer a program of collaboration with other USED initiatives, other federal and state agencies, and private foundation-funded programs. Finally, we have organized these elements into an integrated and collegial Center. We are pledged to move issues related to education, diversity, and excellence of attainment to the forefront of national attention and action.

Premises

CREDE's plan of work flows from eight basic premises. Drawn from educational, psychological, and linguistic theory as well as from social philosophy and from deep American value commitments, they are not necessarily subject to proof, but are philosophical and value positions that guide our decisions and energize our work.

Premise 1 — All children can learn

Regardless of risk factors, all children—through quality teaching and challenging curriculum—can achieve high academic standards.

Premise 2 — All children learn best when challenged by high standards

When schools present high expectations and hold students to high standards for academic achievement, they are assisting at-risk students to reach their greatest potential. Our Center's work shows that language minority children and English language learners (ELLs) should be held to the same high standards as other children, and that their performance should be assessed accordingly.

English language learners have two major tasks in school—learning standard English and mastering academic subjects. But Center research shows that too many of these students are not challenged with the same content as mainstream children. This is possible because schools often treat English language learners as outside of accountability; that is, they are not tested for academic achievement because of their limited English proficiency. As a result, such schools hold neither themselves nor their students to high standards, and this in itself constitutes an additional risk factor for language minority students.

Premise 3 — English proficiency is a goal for all students

Exploring the effectiveness of different methods of helping students develop English-language proficiency remains one the Center's major research areas. We are in the forefront of research into *two-way immersion* or *developmental bilingual* programs, which outcome research tends to favor. Exemplary schools for English language learners, such as those studied by the Center, are flexible in order to accommodate students of varying ages, levels of fluency, and different language backgrounds. Teachers adjust curriculum, instruction, and use of the primary language to meet the varying needs of students. They use a combination of approaches, including ESL instruction (in which students are taught to understand, speak, read, and write English) and sheltered instruction (in which mathematics or history, for example, are taught in English using special techniques to aid students' comprehension).

The exemplary schools we are studying build on—rather than replace—their students' native languages (Berman et al., 1995), using the native languages to develop literacy skills and to deliver content. Content area instruction is integrated into bilingual and sheltered programs for students with limited proficiency in English and is used as a means of providing a context for language production in English.

Premise 4 — Bilingual proficiency is desirable for all students

Research has shown that the achievement of proficiency in two or more languages through school-based programs is feasible and desirable for all students. Students from non-English-speaking backgrounds attain greater success in English proficiency and other domains if age-appropriate levels of first language development, especially

literacy, are achieved (Collier, 1995; Hakuta, 1986). For them, bilingualism is a cognitive, academic, and social asset. Research also shows that English-speaking majority group students can attain high levels of proficiency in other languages at no loss to native language development or academic achievement (Genesee, 1987).

Thus, compared to monolingual students, bilingual students from both majority and minority groups often demonstrate enhanced levels of linguistic, metalinguistic, (Malakoff & Hakuta, 1991), and cognitive development. At the same time, bilingual proficiency better prepares students for participation in increasingly diverse local communities and in our ever-shrinking world community. Finally, dual proficiency in English and another language constitutes a national resource that supports our ability to participate in global economic, political, and cultural spheres.

Premise 5

Language and cultural diversity can be assets for teaching and learning

Schools themselves place children at risk for academic failure if they are content to blame race, poverty, geography, or language for poor learning rather than vigorously experimenting with and evaluating alternative teaching and schooling practices. The knowledge, languages, and sociocultural practices of local communities are a major social and intellectual resource that can be mobilized to enhance teaching and learning in schools. Education for at-risk students is effective when their ways of knowing, talking, valuing, and interacting are taken as the basis for patterning classroom activity and talk and when student participation is elicited rather than limited. These patterns enable students to gain mastery over English, literacy, science, mathematics, and humanities (Au & Jordan, 1981; Boykin, 1986; González et al., 1993; Heath, 1983; Lemke, 1990; Mehan, 1992; Mehan, Hubbard, & Villanueva, 1994; Moll, 1992; Philips, 1983; Rosebery, Warren, & Conant, 1992; Scollon, 1981; Vogt, Jordan, & Tharp, 1992; Warren, Rosebery, & Conant, 1994).

Because we presume that language and cultural diversity are assets, we do not presume that every difference needs accommodation. Careful research can identify those specific accommodations necessary for at-risk children to be successful. For example, Haitian children's culturally based joking argumentation can be a platform for teaching scientific activity. Recent studies of scientists' activity and talk suggest that they transform their observations into findings through argumentation and persuasion. Through analyses of bilingual Haitian science classrooms we have developed a teaching approach that coordinates the culturally and linguistically based patterns of argument with those used by professional scientists (Warren, Rosebery, & Conant, 1994).

Premise 6

Teaching and learning must be accommodated to individuals

Cultural, language, and community groups are not homogenous and unvarying. Effective programs require enough flexibility to accommodate diversity *within* at-risk groups. To stereotype children, even within risk groups, leads to rigid programming that gives all children the same remedy, whether needed or not. We presume variability within groups and require assessment of individual needs, not mere classification by race, family income, geographic location, or language.

Premise 7

Risk factors can be mitigated by schools that teach the skills that schools require

At-risk students need the same education as all children, although they may also need schools to provide some of the experiences that mainstream children find within their own families and community institutions. Consider the well-established finding that

children who have multiple early literacy experiences, such as frequent bedtime stories, are better prepared for typical U.S. schools; by the end of first grade they are likely to be reading at or above average levels. Families read to their children for many reasons: because they want to engage their children in religious study of sacred texts; because reading leads to employment; or just because children love the activity. Because such customs are passed down through generations, parents who were read bedtime stories are more likely to read to their own children. This and many other sociocultural activities have profound consequences in preparing children cognitively with the pre-literacy skills that schools assume.

In the United States today, many children live in households without such sociocultural experiences. Their families may provide similarly rich activities, such as storytelling, in which cognitive, social, and moral development takes place. However, these parents are often less likely to practice early literacy activities, not because they are indifferent to their children's development and education, but because awareness of the crucial influence of pre-literacy activities is not part of their cultural heritage. If children are not provided with experiences that prepare them for what schools expect, then the schools must provide a program that does. Research suggests that the remedy is not to put these children in a separate orogram, but to provide classrooms rich with literacy-relevant activities, activities that parallel those that give an academic advantage to middle-class children.

Premise 8

Solutions to risk factors must be grounded in a valid general theory of developmental, teaching, and schooling processes

This theory must be based on scientific study of human development, language, cognition, culture, history, and values. Further, it must provide a view of culture that enables us to study the effects of culture in the individual, thus leading to instructional programs that work for individual students. Many theories generalize from the group average to the needs of each child. While these may ensure economy of implementation and operation, they cannot produce a strong, flexible, and inclusive educational reform design that is responsive to individual, community, cultural, and linguistic diversity. We have such a valid general theory, to be described later in this report. (See Conceptual and Theoretical Framework, p. 11.)

Mission

The overall mission of the Center is to assist the nation's population of diverse students, including those at risk of educational failure, to achieve to high academic standards. To accomplish this, CREDE does the following:

- We are designing, developing, and disseminating a comprehensive framework for educational systems that is strong, flexible, and inclusive of diversity among all individuals and communities.
- Through a research program with concrete connections to practice, we are discovering, developing, and disseminating fundamental knowledge about the ways that diverse at-risk students can attain excellence in education, with a focus on these areas:

    - Instruction built on students' cognitive, linguistic, community, and cultural strengths.
    - Effective training and development at the professional, paraprofessional, and leadership levels.
    - Family, community, and organizational participation in effective teaching and learning, inclusive of all students.
    - Reform through federal, state, tribal, and community policy.

As part of its mission, CREDE attempts to bring issues related to diversity and educational risk groups to the forefront of national discussions concerning educational research, educational practice, and educational policy. In the past, educators concerned with diversity were too often relegated to the side rooms, where we spoke largely to ourselves—just as happens to at-risk students. Discussions of diversity must be moved to center stage, becoming a focus of national attention. Meeting the needs of diverse student groups must become a major issue not only for the American Educational Research Association, but for legislators, the media, and other national decision makers.

Our studies provide a focus for these discussions of diversity. Our dissemination of findings and implications is designed to produce a national consensus and thus an intellectual force.

We base our comprehensive research program on a theoretical framework that is not only sensitive to the complexities and nuances of culture and language, but is also powerful enough to identify the great commonalties that unite people and to specify the risk factors that must be addressed for all children to blossom.

Conditions are changing so rapidly in the United States that more and more communities and families may be at risk in the future. Many communities in the Rust Belt, for example, are depressed and declining after generations of providing stable employment. Many families who less than a generation ago took the American dream for granted now find their children and grandchildren placed at risk by their economic inability to provide support for academic development. CREDE aspires toward an understanding and a set of principles that are inclusive enough to accommodate everyone— "they" who are at risk today, and "we" who may be there tomorrow.

The Five Generic Principles

Current Knowledge About Effective Education of At-Risk Students

Innovative programs of school reform and research for diverse students have tended to concentrate on specific cultural, linguistic, or ethnic populations and on specific local communities. For many years, the research community concerned with at-risk students has conducted studies on a variety of at-risk populations, including Native Americans; Korean, Chinese, and Southeast Asian Americans; Haitian Americans; Latinos of many national origins; Native Hawaiians; economically disadvantaged and geographically isolated European Americans; rural and inner city African Americans; and others. The field has also shown continued energy in the study and development of model school programs for a variety of mixed racial, linguistic, and cultural groups.

For many years, the author of this paper and his associates have attempted to integrate studies of these groups into literature reviews encompassing thousands of studies conducted worldwide. These reviews (and reviews prepared by others) have uncovered a core list of "generic" findings that transcend specific groups, localities, or risk factors (Collier, 1995; Garcia, 1991; Tharp, 1989, 1991, 1992, 1994; Tharp, Dalton, & Yamauchi, 1994).

General principles are, of course, less detailed than findings for any specific community. And no matter how valid, general recommendations must be modified to fit local circumstances (Cazden & Mehan, 1989; Goldenberg & Gallimore, 1994). The principles below do not purport to be exhaustive; rather they reflect only those findings upon which there is strong current consensus in the field. In addition, research at our previous Center consistently verified these principles. Thus the consensus is broad enough to make these principles an organizing structure, both for continuing research and for immediate implementation into programs for at-risk children.

Principle 1 — Facilitate learning through joint productive activity among teachers and students

Learning takes place best through joint productive activity—that is, when experts and novices work together for a common product or goal, and during the activity have opportunities to converse about it (Moll, 1990; Rogoff, 1991; Tharp & Gallimore, 1988; Wertsch, 1985). In the natural (nonformal) settings of family, community, and workplace, shared ways of understanding the world are created through the development of language systems and word meanings during shared activity. Even the youngest children, as well as mature adults, develop their competencies in the context of such joint activity. Schools do not typically do it this way; there is little joint activity from which common experiences emerge, and therefore no common context that allows students to develop common systems of understanding with the teacher and with one another.

Joint activity and discourse allow the highest level of academic achievement: using formal, "schooled," or "scientific" ideas to solve the practical problems presented by the real world. The constant connection of schooled concepts and everyday concepts is basic to the process by which mature schooled thinkers understand the world. These joint activities should be shared by both students and teachers. Only if the teacher also shares the experiences can the kind of discourse take place that builds basic schooled competencies. Joint activity between teacher and students helps to create a common context of experience within the school itself. This is especially important when the teacher and the students are not of the same background.

Principle 2

Develop competence in the language and literacy of instruction throughout all instructional activities

Language proficiency—in speaking, reading, and writing—is the royal road to high academic achievement. Whether in bilingual or monolingual programs, whether instruction is in English, Spanish, Navajo, or Chinese, language development in the language or languages being used for instruction is the first goal of teaching/learning.

The current literacy movement in cognitive and educational research is revealing the deep ties among language, thinking, values, and culture. Studies of English as a second language indicate the firm links among language development, academic achievement, and cognitive growth (Collier, 1995). Language development at all levels—informal, problem-solving, and academic—should be a metagoal for the entire school day. Language and literacy development should be fostered through use and through purposive conversation between teacher and students, not through drills and decontextualized rules (Berman et al., 1995; Speidel, 1987). Reading and writing must be taught both as specific curricula and within subject matters. The teaching of language expression and comprehension should also be integrated into each content area.

The development of language and literacy as a metagoal also applies to the specialized language genres required for the study of science, mathematics, history, art, and literature. Effective mathematics learning is based on the ability to "speak mathematics," just as the overall ability to achieve across the curriculum is dependent on mastery of the language of instruction.

The ways of using language that prevail in school discourse (such as ways of asking and answering questions, challenging claims, and using representations) are frequently unfamiliar to English language learners and other at-risk students. However, their own culturally based ways of talking can be effectively linked to the language used for academic disciplines by building learning contexts that will evoke children's language strengths.

Principle 3

Contextualize teaching and curriculum in the experiences and skills of home and community

A consistent recommendation of our research field is an increase in contextualized instruction. Schools typically teach rules, abstractions, and verbal descriptions, and they teach *by means of* rules, abstractions, and verbal descriptions. Schools need to assist at-risk students by providing experiences that show how rules, abstractions, and verbal descriptions are drawn from and applied to the everyday world.

Three levels of contextualization must be addressed:

(1) At the *pedagogical* level, it is necessary to establish patterns of participation and speech that are drawn from family and community life and bridge to the sociolinguistic conventions of school participation (Au & Jordan, 1981; Erickson & Mohatt, 1982; Tharp & Gallimore, 1988).

(2) At the second, or *curriculum* level, cultural materials and skills are the media by which the goals of literacy, numeracy, and science are contextualized. The use of personal, community-based experiences as the foundation for developing school skills (e. g., Wyatt, 1978-79) affords students opportunities to apply skills acquired in both home and school contexts.

(3) At the third, or *policy* level, the school itself is contextualized. Effective school-based learning is a social process that affects and is affected by the entire community. Longer-lasting progress has been achieved with children whose learning has been explored, modified, and shaped in collaboration with their parents and communities (John-Steiner & Osterreich, 1975).

All three levels of contextualization have this common premise: The high literacy goals of schools are best achieved in everyday, culturally meaningful contexts. This contextualization utilizes students' funds of knowledge and skills as a sound foundation for new knowledge. This approach fosters pride and confidence as well as greater school achievement.

Principle 4 — Challenge students toward cognitive complexity

At-risk students, particularly those of limited Standard English proficiency, are often forgiven any academic challenges, on the assumption that they are of limited ability; or they are forgiven any genuine assessment of progress, because the assessment tools don't fit. Thus both standards and feedback are weakened, with the predictable result that achievement is handicapped. While such policies may often be the result of benign motives, the effect is to deny many diverse students the basic requirements of progress: high academic standards and meaningful assessment that allows feedback and responsive assistance.

There is a clear consensus among researchers in this field that at-risk students require instruction that is cognitively challenging, that is, instruction that requires thinking and analysis, not only rote, repetitive, detail-level drills. This does not mean ignoring phonics rules or not memorizing the multiplication tables, but it does mean going beyond that level of curriculum into the exploration of the deepest possible reaches of interesting and meaningful materials. There are many ways in which cognitive complexity has been introduced into the teaching of at-risk students. There is good reason to believe, for instance, that a bilingual curriculum itself provides cognitive challenges that make it superior to a monolingual approach (Collier, 1995).

Working with a cognitively challenging curriculum requires careful leveling of tasks, so that students are stretched to reach within their zones of proximal development, where they can perform with available assistance. It does not mean drill-and-kill exercises, and it does not mean overwhelming challenges that discourage effort. Getting the correct balance and providing appropriate assistance is, for the teacher, a truly cognitively challenging task.

Principle 5 — Engage students through dialogue, especially the instructional conversation

Basic thinking skills—the ability to form, express, and exchange ideas in speech and writing—are most effectively developed through dialogue, that is, through the process of questioning and sharing ideas and knowledge that happens in the *instructional conversation*.

The instructional conversation is the means by which teachers and students relate formal, schooled knowledge to the student's individual, community, and family knowledge. This concept may appear to be a paradox; instruction implies authority and planning, while conversation implies equality and responsiveness. But the instructional conversation is based on assumptions that are fundamentally different from those of traditional lessons. Teachers who use it, like parents in natural teaching, assume that the student has something to say beyond the known answers in the head of the adult. The adult listens carefully, makes guesses about the intended meaning, and adjusts responses to assist the student's efforts—in other words, engages in conversation (Ochs, 1982). Such conversation reveals the knowledge, skills, and values—the culture—of the learner, enabling the teacher to contextualize teaching to fit the learner's experience base. This individualizes instruction in much the same way that each learner is individualized within a culture (Dalton, 1993).

In U.S. schools the instructional conversation is rare. More often teaching is through the *recitation script,* in which the teacher repeatedly assigns and assesses. True dialogic teaching transforms classrooms and schools into "the community of learners" they can become "when teachers reduce the distance between themselves and their students by constructing lessons from common understandings of each others' experience and ideas" and make teaching a "warm, interpersonal and collaborative activity" (Dalton, 1989).

The Research Design: CREDE's Agenda

Enacting and Unpacking the Principles

How will the Center's research agenda advance the understanding of these issues over the 5-year grant period? The consensual, generic principles discussed above provide a basis for our 5-year research program. Our sequenced research agenda includes research into the *enactment* and *unpacking* of these basic principles.

Enactment Research and Development

Research has outstripped development. That is, the research community knows far more about what to do than about how to get it done. Despite the consensus on the generic principles above, their enactment is rare and occurs almost entirely in small, local "hand-crafted" programs under strong researcher/theoretician influence, or in single classrooms of individual outstanding teachers. Such programs rarely survive withdrawal of the key research or teaching personnel. Large-scale programs enacting these principles are largely unknown.

Thus the first crucial research question now facing the field is this: How can our research knowledge be enacted in scaled-up, reliable programs for large numbers of at-risk students? While the general literature on restructuring, reform, and upscaling offers some guidance, effective teaching that is attentive to linguistic and cultural characteristics of students presents significant challenges for enactment. These include challenges in teacher professional development, managerial and organizational principles, and school-community relations that hinder up-scaling even of the conventional sort. The projects of CREDE are designed to uncover specific resistances and barriers to enactment and to develop detailed, practical models for overcoming them.

The enactment of the principles will also make possible their refinement. Because enactment has been infrequent in real schools, it has not been possible even to test the validity of these principles definitively. No matter how confident we researchers may be, we still must put our findings to empirical tests, and this cannot be done until the principles are enacted in a wide range of real classrooms and schools.

Unpacking the Principles

Once we have enacted and tested the principles, we can then proceed to unpack them—that is, to see how they work internally, refine their statements, and determine their limitations. These principles are necessarily and intentionally generic, but in all likelihood there are situations and individuals for whom they must be modified. The principles are now almost like "black boxes," and the next stage of research will be to open those boxes, to refine and deepen our understanding and our prescriptions for development.

The majority of the studies in the Center focus on one or more of these principles, and by studying their enactment in a variety of settings and linguistic and cultural populations, we will come to understand them better. For example, researchers are in consensus about the value of teaching at-risk students in the context of family and community relationships. Our studies examine, for example, how peer relationships are formed; how friendship networks affect academic achievement; how grandparents and parents assist with homework; how teachers and parents can work together on curriculum reform; how informal and formal community-based organizations can work effectively with schools and families for academic achievement. At the end of this research program, we will be able to make much more complex, conditional, and clear statements about effective means for familial and community contextualization. A similar process will be followed for each of the generic principles.

We expect that the CREDE projects, in communication with the work of the national research community, will advance research consensus and result in additional clear recommendations for reform directed at the needs of at-risk students from diverse linguistic and cultural backgrounds.

Research Applications to the Nation's Broader Research Agenda

The generic principles discussed above are applicable not only to linguistically and culturally diverse students, nor only to at-risk students; the Center's research agenda will significantly advance the understanding of issues central to all of U.S. education, covering the entire range of responsibility of OERI. *Research in the diversity field is the foundation for research on education for all students, because it is based on the full range of variance necessary for the widest range of applicability.* Research exploring only mainstream students, schools, teachers, and policies is actually far too narrow in scope to allow full generalization to universal principles.

This often goes unrecognized by mainstream communities of educators and policy makers. The universal need for our generic conditions is masked, because mainstream families or communities provide their children with those conditions, so schools need not do so. Contextualized teaching, instructional conversation, joint productive activity with literate discourse, exposure to scientific, commercial, and professional language conventions—these are provided in the bedtime stories, car-pool driving, dinner table conversations, family homework projects, little league coaching, and other activities of the middle class, and they prepare students for the literacy activities of school. These sociocultural activities occur much less often in the families and communities of impoverished at-risk students. Therefore the schools must increase the frequency of such activities to a level of equity, basing them on sociocultural resources of the students' communities.

This situation, once understood, further emphasizes that the most fundamental discoveries about quality education are being made by studies such as those being carried out by the Center. Even though mainstream students can prosper in conventional schools, every student's academic performance can be enhanced by creating effective educational sociocultural activities in schools. Thus our research agenda will ultimately improve education for all children.

Conceptual and Theoretical Framework

The Sociocultural Theory of Education

The sociocultural theory of education is the organizing conceptual structure for CREDE, as it was of our predecessor, the National Center for Research on Cultural Diversity and Second Language Learning. The sociocultural approach is among the most significant contemporary themes in a wide range of intellectual disciplines worldwide, including philosophy, literary and aesthetic criticism, theology, and the social sciences. Along with cognitive science, it is a contender for the dominant paradigm in contemporary psychology and education. Because sociocultural theory is so basic to the study of developmental and educational issues, its consequences for teaching, schooling, and public policy are profound.

What is this theory? Like all vigorous intellectual movements, it is undergoing a process of rapid expansion and clarification. However, there is a set of basic positions that distinguish the approach and guide its research and development work. For example, the individual learner is viewed not as a "receptacle" into which knowledge is poured by teachers nor as an "acquirer" who seeks and seizes new knowledge through individual effort. Rather, the learner is an active participant in teaching and learning; *the learner and the teacher are participants in sociocultural activity* (Rogoff, 1995).

While we value and use the explanations offered by cognitive science as to the structures, processes, and mechanisms of thinking, education must be concentrated on cognitive *development*. Sociocultural theory explains the cognitive development of all individuals—of any age, culture, or level of sophistication—through the same basic principles. In fact, the applications of the theory in schools have been based on the natural socialization of children by their parents and caretakers. The key to development lies in participation in sociocultural activities, activities often seen as so mundane that their powerful role in development is not noticed.

A study of poor Latino families in Watsonville, CA, examined the questioning behavior of young children. Maria (age 3) asks, "Why does the ocean have so much water?" Miguel (age 4) asks, "How is fog made?" And 5-year-old Roberto asks, "Why do people die?" Their parents attempt to answer these questions with accurate information. Just as in middle-class families, these parents are pleased with their children's curiosity and do their best to foster this eagerness and engagement (Callanan, 1994).

Our socioculturally based school programs use this innate curiosity to construct miniature communities of scientific practice.

Students in a Cambridge, MA, eighth-grade science class for Haitian immigrants decided to investigate a persistent and contentious school rumor, that the water from the third-floor drinking fountain tasted worse than the downstairs water. The science class interviewed other students and analyzed the chemical properties of the water from each fountain. Classes were conducted in the Haitian Creole language by bilingual teachers trained in science teaching by Center researchers (Warren, Rosebery, & Conant, 1994). The Water Taste Test has been included as an exemplary project in the Massachusetts State Science Frameworks, in the USED/OBEMLA (Office of Bilingual Education and Minority Languages Affairs) profile of academic excellence programs, and is being considered for inclusion in the National Academy of Science's National Science Education Standards.

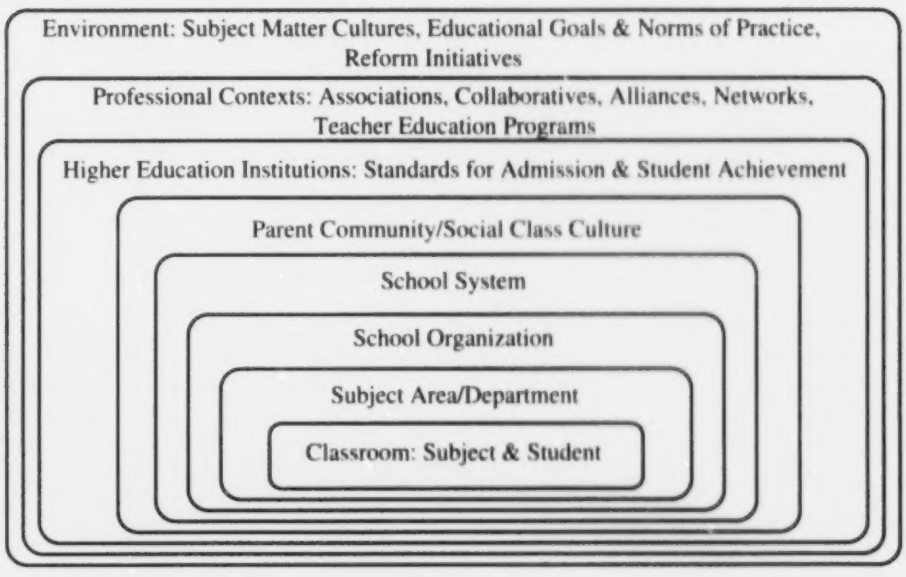
Participation in sociocultural activity occurs on many planes or levels of interaction. Rogoff (1995) suggests that research can be divided into three general types, depending on the plane of focus.

- The *personal plane* involves cognition, emotion, behavior, values, and beliefs. In education research, this might correspond to studies of individual student or teacher actions or competence.
- The *interpersonal or social plane* includes communication, role performances, dialogue, cooperation, conflict, assistance, and assessment. In education this plane might be addressed through studies of teaching/learning interactions, activity settings in teacher education programs, or cooperative learning groups.
- The *community plane* involves shared history, languages, rules, values, beliefs, and identities. In educational research, the community plane corresponds to studies of entire schools, districts, professions, and polities, as well as neighborhoods, tribes, and cultures.

To understand any area of human development, all planes must be taken into account. For example, even the most personal values, beliefs, or expectations are, in part, reflections of the values, beliefs, and expectations of the families or communities to which each person belongs. And when we analyze a community or culture, we see that it consists of the values, beliefs, and expectations held by individuals in that community. Furthermore, those values, beliefs, and expectations are learned and taught in the interpersonal plane of parenting, schooling, and apprenticing.

Sociocultural theory emphasizes that the personal, interpersonal, and community planes are truly inseparable. Vygotsky (1978) expressed this unity in his famous phrase, "everything that is psychological was first social." It is through participation in sociocultural activity that mind, community, and culture mutually create one another. As a practical matter, the three planes are investigated in many successively contextualized organizations or layers. McLaughlin and Talbert (1993) represent these multiple, contextualized planes diagramatically (see Figure 1).

Figure 1


Environment: Subject Matter Cultures, Educational Goals & Norms of Practice, Reform Initiatives
Professional Contexts: Associations, Collaboratives, Alliances, Networks, Teacher Education Programs
Higher Education Institutions: Standards for Admission & Student Achievement
Parent Community/Social Class Culture
School System
School Organization
Subject Area/Department
Classroom: Subject & Student

Language is the primary force that defines and connects these planes. Through signs and symbols—primarily linguistic—meaning and interpretation are carried from communities, through interpersonal activity, into the individual mind. Reciprocally, the creation of new forms and symbols of expression by individuals shapes interaction and culture.

Language is the primary mark of identity for nations, cultures, regions, trades, professions, disciplines, and clubs. Languages and speech registers mark people, enable performance, integrate or separate, and are absolutely necessary for participation in any community. This is true not only within entire cultures, but within "communities of practice." For example, scientists, mathematicians, and construction workers all have a language specific to their group.

Dalton and Sison (1995) studied the use of instructional conversations to develop the language of geometry in resistant, excluded middle-school Latinos. Their data showed that joint activity with the teacher and dialogic instruction transformed the language performance of these severely at-risk students in just four sessions. Student participation became more confident, frequent, vigorous, and correct. These findings proved statistically significant.

Activity Settings

Given the complexity and unity of sociocultural activity, how can disciplined research and inquiry proceed? In sociocultural theory, the basic unit of analysis is the activity setting. Participation in sociocultural activity occurs in regular patterns, ordinarily in daily routines. Each daily routine consists of separate "paragraphs," or activities-with-a-purpose, such as making and eating breakfast, car-pooling, the classroom's morning business, first-period geometry, volleyball practice, a four-hour shift at MacDonald's, or homework with sisters. Each of these units is an *activity setting*, and it has regularities of who, what, when, where, why, and how. Because each activity setting encompasses all planes, a study of a specific reading lesson, a specific self-help seminar for teachers, or a specific school board meeting can reveal the personal, interpersonal, and community planes in simultaneous operation—in every comment about the novel being studied or about the motion before the board. For any single study, a focus on one plane is often desirable, but in the sociocultural perspective, the background of other planes must also be considered in any explanation. Successful school reform requires an integration of all three planes.

These principles were reflected in the Center's work at a bilingual school in Los Angeles (Goldenberg & Gallimore, 1991). The project included an extended case study of a single teacher's development, focusing on the *personal plane*. Data collected included interviews, her journals and diaries, and observations of her classroom performance. A crucial activity setting for her professional development was the joint weekly work/discussion sessions with other teachers and the Center researchers, organized for mutual assistance and cooperative production. Data on this aspect of her development were from the *interpersonal plane* and were collected from the joint productive activities with these teachers and staff developers. This included content analysis and a microethnographic study of videotapes of the meetings. Such productive activity settings, however, cannot long survive unless *the community plane* of the school creates and sustains it and unless there is coherence among the community, interpersonal, and personal goals. Data for study of the community plane included interviews with participating teachers, charts of supporting activities designed (or allowed) by the building principal, and a record of his decisions that affected school climate. Thus a comprehensive view of this school reform effort was compiled and useful ideas distilled for the up-scaling project being conducted by CREDE.

Within activity settings, *assisted performance* is the hallmark of teaching, learning, and effective productivity. Just as in natural work groups and in natural child socialization, participants who are more skilled in certain tasks assist those less able—who can in turn assist others when their own expertise is developed. Assistance can be of many kinds, including direct instruction, demonstrations, practice sessions, as well as careful exploratory instructional conversation.

A major focus of sociocultural research has been to detail the integration of various means of assistance, in order to produce a comprehensive theory of pedagogy. Effective assistance is sensitive to the developmental levels of the learner; it occurs within the context of joint activity; and regardless of roles in that activity, each individual's contributions (and capacities to assist others) are valued and encouraged.

Small groups of students with different talents and needs can be assigned to work together on a project. Students who need help on a task can learn from a peer who has mastered the task, and the "masters" benefit cognitively and emotionally from organizing and explaining what they know. Accomplishing a cooperative task successfully requires students to engage in meaningful communication about the task at hand, which is the optimal context for language learning. In discussing their ideas, students come to a more complex understanding. This arrangement can apply to students with different levels of English proficiency.

Daniela has tried several strategies to get her group members focused on the task at hand. Finally, she says the answer to one of the questions out loud in Spanish. This gets George's attention; he responds in Spanish and the two of them write the answer down in English. The children return to individual work until Davina speaks in English, prompting the students to focus as a group once more. The studies of Gumperz and Cook-Gumperz concluded that this language switching often does not arise from a lack of English proficiency, but is a signal to rally the group to work collectively, and to marshal mutual assistance (Gumperz, Cook-Gumperz, & Szymanski, 1995).

To understand and reform education we must study the actual activity settings of classrooms, schools, and communities, including the personal thoughts and feelings of individuals; the interpersonal patterns among all participants; and the cultural and historical contexts that provide the values and expectations of individuals. To understand and reform education, we must understand the patterns of effective assistance in activity settings, whether those activities are in kindergarten classrooms, teacher education programs, or parent/teacher cooperative programs. To understand and reform education, we must give primary attention to the acquisition of languages—speaking, reading, and writing—including Standard English, as well as the languages of mathematics, of science, and of literate discourse concerning industry, the marketplace, and government. Because language is the very stuff of human activity, only by effectively using the proper languages can students gain access to the communities of power and success.

This theory has great potential to assist diverse, at-risk students. Because daily routines, activities, and languages vary sharply for different communities, so do values, expectations, skills, and beliefs vary among children. Even schools that are sincerely committed to broader service may be baffled about how to teach children so different from those assumed by our traditional schooling methods and settings.

Scarcella & Chin (1993) investigated homework activity settings of Korean immigrant children and parents and contrasted them with similar activity settings of European American families and with homework-review activity settings in schools. Korean parents tended to give corrective feedback as soon as the child made a mistake: "This one's wrong. You missed this one here," and then told the child how to do it right: "You colored the face blue. You need to use this crayon. Don't use that color. Use this one." In contrast, parents from European American backgrounds (not recent immigrants) tended to withhold comment until the child finished: "Good. You missed three out of twenty. See, these three are wrong," and to encourage children to correct mistakes by themselves: "Okay, you made a mistake. See if you can figure out what you did wrong." Theirs was similar to the comparable activity setting in school. Even this simple mismatch illuminates the kinds of challenges faced by those teaching diverse groups of students.

Sociocultural theory offers the hope of creating more effective activity settings in which assistance will occur, languages will be learned, and risk factors will be transcended.

Theory Unifies Inquiry

Sociocultural theory allows the development of unified conclusions and recommendations from its research agenda because it considers education at all levels of inquiry. The integrated concepts and theoretical language assure that each project relates to all others. Thus our coherent Center program flows organically from the theory that unifies it. This allows each study in our Center to contribute substantially to its own topical field and simultaneously to feed back into the development of general sociocultural theory.

This pattern of integrity-within-topics as well as contributions-to-the-whole also applies to disciplines and methods. Certain disciplines and methods are more appropriate for the study of certain planes of inquiry than others. For example, sociological concepts of attitude formation—and survey methods for measuring it—have strength for studying communities. Microethnography has demonstrated value for studying interpersonal teaching/learning activities, and culture theory is useful in interpreting these results. Psychological theory and methods are often appropriate to the study of the personal plane. In the sociocultural approach, the disciplines and methods of history, psychology, sociology, linguistics, anthropology, education, and theology have all contributed to the understanding of particular topics. Likewise, these topical investigations have fed back as influences on their particular disciplines and methods.

Research Integration: People, Projects, & Programs

CREDE is an interlocking set of people, projects, and programs. As in a geodesic dome, each inquiry is a panel that both supports and is supported by the whole structure. Several design features tie these elements together into a single Center.

Integration through multifaceted single-site projects

Some projects are comprehensive, whole-school programs that involve family and community members, provide professional development for school staff, and include out-of-school supports (e.g., Project 1.5, Goldenberg et al.; Project 4.2, Civil et al.; Project 4.4, Stoddart; Project 5.2, Stringfield et al.; Project 5.5, McIntyre et al.; Project 5.7, Tharp & Dalton). These inquiries provide data at multiple levels ready for integration. However, merely organizing multiple projects at the same site does not ensure useful integration of findings. This can occur only with the integration of concepts, data, and explanations. Our theoretical foundation and plan of operation guarantee such integration, through one or more of the following strategies.

Integration through multiple planes of focus

In sociocultural theory, each research project focuses on, or "foregrounds," one or more of the sociocultural planes. But each study also takes into account the planes that are "backgrounded."

For example, in our Native American Zuni project (Project 5.7, Tharp & Dalton), the foregrounded plane is the interpersonal. Teacher/parent focus groups are designed to change the perceptions and actions of the school community and the parent community. The richest data will be collected in the focus group activity settings and by objective measurement of the subsequent interactional behavior of teachers and parents. But we will interpret these findings through background data on the individual plane, for example, by measuring changes in attitudes, individual teacher performance, and student achievement. In addition, we might understand errors in organizing the seminars, or resistance to them, by gathering data (through attitude surveys and interviews) on historical community values that might contribute to conflicting discourse styles and rules for participation.

Integration through multiple planes across studies

Our underlying theory allows cross-over generalizations from project to project because all are based on shared concepts. For example, we are conducting studies that focus on the individual development of capacities (the individual plane), such as Padrón's study of teaching resilience (Project 5.4); on the role of the interpersonal plane in teacher development for sheltered instruction (Project 1.3, Echevarria & Short); and on whole-school upscaling and school reform (the community plane), such as the study of school transformation for English/Spanish transition bilingual programs (Project 1.5, Goldenberg et al.). Because our studies are fully integrated, their separate results allow the Center as a whole to make recommendations about how individual teaching and learning, teacher development, and systemic reform affect one another, and thus determine how these changes can all be fostered by sound policies.

Integration through multiple planes within programs

All Center projects are organized into program groups by topic area. The projects within each program group have been selected and designed in coordination, so that each plane—personal, interpersonal, and community—in the topic area is foregrounded by

one or more projects. This guarantees a comprehensive view of each topic area and ensures that the knowledge generated will be greater than that produced by each project separately.

Integration of topics and priorities into a Research Center

This unifying framework ties our work together within projects, across projects into programs, and across programs into a genuine research center. Our unified plan of work addresses all four of the topics listed under OERI's Priority Topic list for *Meeting the Educational Needs of a Diverse Student Population.*

Our unifying theory, our research design, and our concrete operational plan thoroughly integrate these four priority topics into a comprehensive plan of work. Through the integrated research design just described, each recommendation made for one priority topic will be informed by what we know about other topics. For example, in recommending certain professional development activities, we will be able to speak to the policy issues that enable or limit those recommendations. We will recommend certain instructional practices with an awareness of how they may be enabled or limited by professional development decisions. We will understand the family and community contexts that must influence the choice of content for professional development activities.

> **Achieving success for all students in a rigorous curriculum of study demands integrated attention to teachers and students as well as content and standards—to all components of the classroom core. Meeting the nation's educational goals requires a policy frame that moves beyond a (project mentality), and away from a (one thing at a time approach) to reform to consider simultaneously the policy issues central to *all three aspects of the classroom core:* content, students, and teacher. (McLaughlin & Talbert, 1993, p.19)**

Integration of research and practice

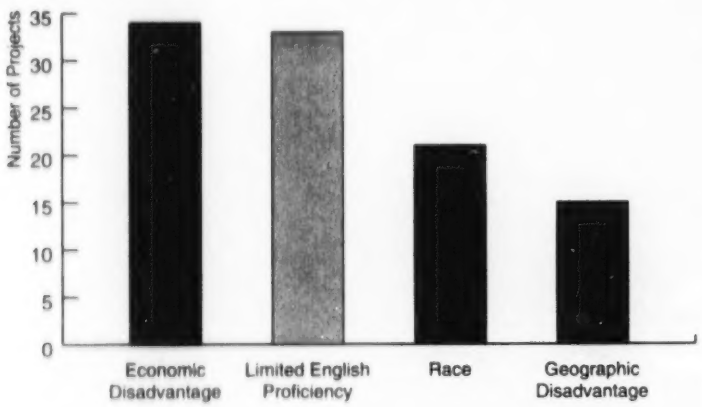
The majority of our studies involve teacher/researcher partnerships. Except for archival analyses, all studies are shaped by the voices of teachers, parents, or community members. A primary repository of CREDE's knowledge capital is in our teacher/researchers. We intend to grow that capital, to involve our cadre of knowledgeable teachers in teaching other teachers, and to use their experience as working partners in upscaling to systemic reform.

Scope, Range, and Scale of the Center

Risk Factors

The USED program under which CREDE is funded calls for "research and development on meeting the needs of an increasingly diverse student population, including students who are at risk of educational failure because of limited English proficiency, poverty, race, geographical location, or economic disadvantage." Figure 2 displays CREDE's coverage of topics by listed risk factors. We provide excellent balanced coverage of all four factors, with every project involving students suffering more than one risk factor, and most including students from more than one culture or language group.

Figure 2 Risk Factors



Language, Ethnicity, and Culture

CREDE's research program is designed to provide a broad overview of groups to ensure that conclusions are drawn from sufficient diversity of students and evidence. Figure 3 displays the coverage of our projects by the following general cultural/ethnic/language groups: Latino/Hispanic, Asian American, Native American (Indian), African American, poor European American, and Other (including Haitian American, Native Hawaiian, and Native Alaskan). As can be seen, the Center provides excellent coverage of our national diversity, including those students at risk.

Figure 3 Groups

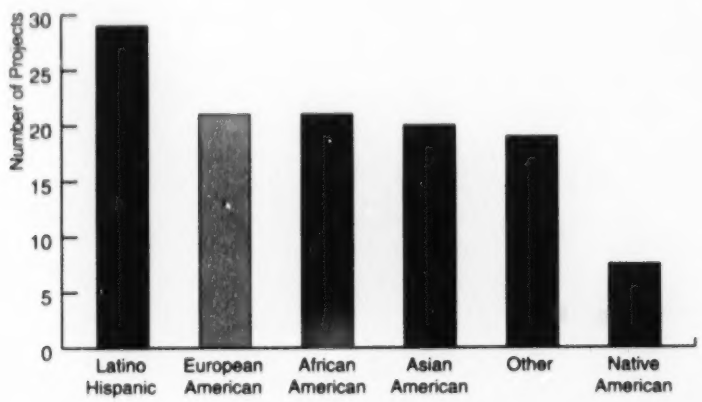
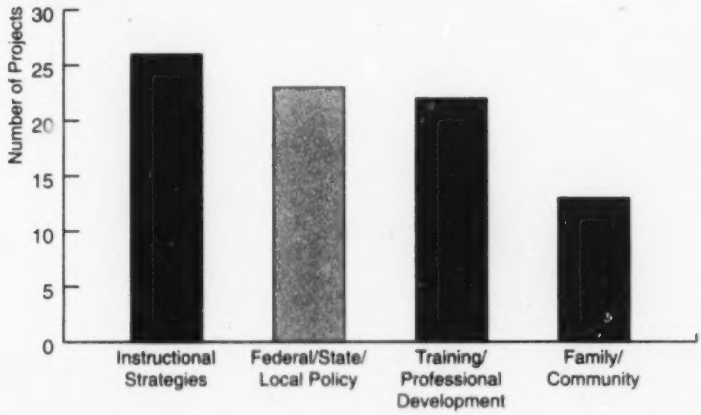


Figure 4 displays the coverage by our projects of these four topic areas: (1) instructional strategies; (2) federal/state/local policy; (3) training/professional development; (4) family/ community. CREDE provides balanced and integrated coverage of all four of these priority topics.

Figure 4 Priorities



Regional and National Coverage

Figure 5 displays in map form the geographic scope of our work. Each dot represents Center presence: that is, either an individual researcher or research institution or a location where studies are being conducted.

Figure 5 Center Presence 1996-2001

Appendix A

Programs and Projects

Project Briefs

Program 1 — Language Learning and Academic Achievement

Program Directors: Donna Christian and Fred Genesee

This program cluster looks closely at several programmatic approaches in schools with linguistically and culturally diverse students. Research projects are 1) examining the effectiveness of a number of distinct educational programs designed to meet the needs of limited English proficient (LEP) students at both elementary and secondary levels; 2) describing programmatic features and instructional strategies that facilitate the acquisition of English for academic purposes among LEP students so they can benefit fully from instruction through English; and 3) identifing the professional development needs of educators working within these approaches. These studies will deepen our understanding of successful programs and practices and provide guidance to educators and policymakers to enable them to meet the educational needs of LEP students.

Project 1.1 — **A National Study of School Effectiveness for Language-Minority Students' Long-Term Academic Achievement**

Virginia P. Collier and Wayne P. Thomas, George Mason University

This study is working with 10 different school districts across the country that have large numbers of language minority students. The study focuses on the length of time language minority students need to become academically successful in a second language and on the student, program, and instructional variables that influence their academic achievement. For more information, contact Maggie Gonzales (703-993-3688).

Project 1.2 — **Two-Way Immersion Education**

Donna Christian, Center for Applied Linguistics
Fred Genesee, University of California, Davis

This study is probing instructional outcomes, student populations, and long-term effects of two-way immersion and will document program implementation in schools across the country. For more information, contact Donna Christian (202-429-9292 or donna@cal.org) or Fred Genesee (916-752-8258).

Project 1.3 — **The Effects of Sheltered Instruction on the Achievement of Limited English Proficient Students**

Jana Echevarria, California State University, Long Beach
Deborah Short, Center for Applied Linguistics

This project is 1) developing an explicit model of sheltered instruction; 2) using that model and a trainer-of-trainers approach in four large urban districts to train teachers in effective sheltered strategies; and 3) conducting field experiments and collecting data

to evaluate teacher change and the effects of sheltered instruction on LEP students' reading achievement and English language development. For more information, contact Jana Echevarria (310-985-5759 or jechev@csulb.edu) or Deborah Short (202-429-9292 or dshort@cal.org).

Project 1.4

Newcomers: Language and Academic Programs for Recent Immigrants

Deborah Short, Center for Applied Linguistics

This study examines newcomer programs for recently arrived secondary students with limited English proficiency and the ways in which these programs promote student transitions into U.S. schools. The study is examining the administrative, instructional, and sociocultural features of newcomer programs and comparing them with traditional programs serving LEP students. For more information, contact Deborah Short (202-429-9292 or dshort@cal.org).

Project 1.5

Upscaling For Transition: Instructional and Schoolwide Factors to Support Latino Students' Transition From Spanish to English Instruction

Claude Goldenberg, California State University, Long Beach
William Saunders and Ronald Gallimore, University of California, Los Angeles

This project seeks to identify the program-feature activity settings most likely to help students make a successful transition from native language (Spanish) to mainstream English instruction, and the implementation-process activity settings best able to assist schools in adopting and using an effective transition program. This research is designed to ensure that schools across the nation can adopt and implement model transition programs. For more information, contact William Saunders (562-985-5644 or bsaunder@ucla.edu).

Program 2 Professional Development

Program Directors

Leonard Baca and Robert Rueda

This group of projects will examine the characteristics, careers, pre-service education, and in-service professional development of educators of bilingual and culturally diverse at-risk students. Researchers will seek ways to help teachers adapt their instructional methods to meet their students' needs and become more familiar with their students' backgrounds, culture, and language. Research will also investigate the effective professional development of school leaders within the context of school reform. This program represents a comprehensive view of professional development closely tied to actual practice, and of the major issues in the field, from the characteristics of teachers through the processes of development to the policies that will enable reform.

Project 2.1

A National Study of Effective Teacher Education for Diverse Student Populations

Leonard Baca, BUENO Center, University of Colorado, Boulder

This study is examining the structure, curriculum content, and process of 352 bilingual teacher education programs, focusing on how programs increase teachers' capacity to teach linguistically and culturally diverse students effectively. For more information, contact Leonard Baca (303-492-5416 or leonard.baca@colorado.edu).

Project 2.2

Expanding Knowledge Base on Teacher Learning and Collaboration: A Focus on Inner-City Chinese-American LEP Students

Ji-Mei Chang, San Jose State University

This project is designing a model for Chinese bilingual education teachers and learning disability specialists to improve service delivery for inner-city Chinese-American students with limited English proficiency and learning disabilities. For more information, contact Ji-Mei Chang (408-924-3705 or jmchang@email.sjsu.edu).

Project 2.3

Latino Paraeducators as Teachers: Building on Funds of Knowledge to Improve Instruction

Robert Rueda, Michale Genzuk, Ray Baca, and Guilbert Hentschke, University of Southern California

This project aims to assess the nature and use of existing funds of knowledge of bilingual Latino paraeducators. Funds of knowledge include language, social norms, and other cultural and linguistic community and family resources, such as social history, as well as bodies of knowledge that are essential to a household's functioning and well-being. The project is studying candidates entering the teacher training program at the University of Southern California and recent graduates of the training program. For more information, contact Robert Rueda (213-740-2371 or rueda@mizar.edu).

Project 2.4

Leading for Diversity: Professional Development for School Leaders

Sau-Lim Tsang, Rosemary Henze, Anne Katz, Edmundo Norte, and A. Reynaldo Contreras, ARC Associates

Responding to the needs of school leaders seeking solutions to racial and ethnic conflict at their schools, this study examines the characteristics and processes of exemplary leadership in fostering school unity. The study will document how school leaders create and maintain this unity as members of the school community engage in school reform. For more information, contact Rosemary Henze at 510-834-9455.

Program 3 Family/Peers/Schools and Community

Program Directors

Catherine Cooper and Patricia Gandara

This program cluster examines the contexts of student socialization, including schools, families, peers, and community, in Chicano/Latino, Asian American, Native American, African American, and low-income European American students and communities. The various research projects investigate the effects of family, peers, school, and community on students' learning, academic skills, attitudes toward school, close relationships, and the construction of their educational, vocational, and moral values.

Project 3.1

A National Survey of School/Community-Based Organization Partnerships Serving At-Risk Students

Carolyn Temple Adger, Center for Applied Linguistics

This study seeks to identify essential features of successful partnerships between schools and community-based organizations (CBOs) that support the academic achievement of language minority students. For more information, contact Carolyn Adger (202-429-9292 or carolyn@cal.org).

Project 3.2

CBO/School Relationships in Urban Southeast Asian Communities

Adeline Becker and Francine F. Collignon, Brown University
Serei Tan, Providence School District, RI

This project is investigating potential barriers to educational success, especially language, culture, and economic status, affecting Cambodians, Laotians, Hmong, and Vietnamese communities. The research will also identify factors specific to each group—such as educational background, cultural support networks, social organization, and consequences of war in the country of origin—that affect access to health and social services. For more information, contact Adeline Becker (401-274-9548 or adeline_becker@brown.edu).

Project 3.3

Coordinating the Worlds of Family, Peers, and Community in Adolescence: Implications for School Achievement

Margarita Azmitia and Catherine R. Cooper, University of California, Santa Cruz

This project is investigating how early adolescents coordinate their family, peer, school, and community worlds, how others help or impede such coordination, and how these multiple worlds relate to school achievement. This research explores these issues in at-risk Mexican American and European American students. For more information, contact Margarita Azmitia (408-459-3146 or azmitia@cats.ucsc.edu) or Catherine Cooper (408-459-4157 or ccooper@cats.ucsc.edu).

Project 3.4

Developing Immigrant Parents' Computer Literacy in Partnership With Students' Learning

Richard P. Durán and Jane Durán, University of California, Santa Barbara

This project is training 70 to 100 parents of third- through fifth-grade children with limited English proficiency to manipulate the word processing, graphics processing, and publishing software used by their children in their classrooms and after-school computer club activities. The project will document and evaluate outcomes of computer training on parents and children. For more information, contact Richard Durán (805-893-3555 or duran@education.ucsb.edu).

Project 3.5

The Role of Classroom Social Organization in Educational Functioning and the Development of Peer Relationships and Teacher-Student Relationships

Peggy Estrada and Roland G. Tharp, University of California, Santa Cruz

This project examines the nature of the social organization of culturally diverse classrooms, including peer relationships, teacher-student relationships, and school adjustment. For more information, contact Peggy Estrada (408-459-3649 or peggye@cats.ucsc.edu).

Project 3.6

Peer Group Influence and Academic Aspirations Across Cultural/Ethnic Groups of High School Students

Patricia Gandara, University of California, Davis

This study investigates the structure, formation, and influence of adolescent peer groups across four ethnic groups—Hispanics, European Americans, African Americans, and recent Asian immigrants—from lower income and working class communities in which students are commonly at risk for low academic aspirations and school failure. For more information, contact Patricia Gandara at 916-752-8262.

Program 4 — Instruction in Context

Program Directors: Beth Warren and Norma González

The projects in this program hold that teaching, curriculum, and the school itself should be contextualized in the experiences, skills, and values of the community. In each of the projects, the researchers accept the communities' sociocultural activities as the contexts for making school work meaningful, and devise school activities to bridge home and school, thus building authentic classroom communities that can produce high academic achievement. Each project includes a strong professional development component by creating sociocultural activities that allow teachers to understand the students' contexts and to develop ways to use these in the academic world. The professional development models examined include teacher as researcher, teacher as participant in the workplace, and teacher as joint worker with students.

Project 4.1 — Teaching Science to Students Placed at Risk: Teacher Research Communities as a Context for Professional Development and School Reform

Beth Warren and Ann S. Rosebery, TERC, Cambridge, MA

This project investigates teacher research communities as contexts for professional development in science for teachers of language minority students. The study is developing teacher research as a model that provides teachers with the skills and knowledge they need to make professional development an integral part of their everyday practice, a practice that is sensitive to local needs and diverse student populations. For more information, contact Beth Warren (617-547-0430 or beth_warren@terc.edu).

Project 4.2 — Linking Home and School: A Bridge to the Many Faces of Mathematics

Marta Civil, Norma González, and Rosi Andrade, University of Arizona

This project examines the gap between mathematics in school and mathematics outside school for language minority students. The study will emphasize mathematics teaching that stresses students' own construction of meaning and connections to their world outside school. Researchers are developing mathematical learning communities in the classroom, where students engage in mathematically rich situations through learning modules that capitalize on their knowledge and experiences of everyday life. For more information, contact Marta Civil (520-621-6873 or civil@math.arizona.edu).

Project 4.3 — At-Risk Preschoolers' Questions and Explanations: Science in Action at Home and in the Classroom

Maureen Callanan, University of California, Santa Cruz
National Center for Early Development and Learning, University of North Carolina-Chapel Hill

This study will investigate "why" questions asked by young children identified as at risk for educational failure because of limited English proficiency or poverty. The study focuses on the nature of explanatory conversations at home and at school and on ways that parents and teachers can best encourage children's natural curiosity about scientific domains. For more information, contact Maureen Callanan (408-459-3147 or callanan@cats.ucsc.edu).

Project 4.4 **Developing a Culturally and Linguistically Responsive Science Curriculum**

Trish Stoddart, University of California, Santa Cruz

Collaborating with three schools in the Language Acquisition through Science Education for Rural School (LASERS) project, researchers are conducting in-depth longitudinal case studies of language minority students. The project will examine student learning and language development; analyze the funds of knowledge about science in the home and community; and analyze instructional interactions between students and teachers. For more information, contact Trish Stoddart (408-459-3850 or stoddart@cats.ucsc.edu).

Project 4.5 **Teaching/Learning in the Context of African American English Culture and Community**

Michele Foster, Center for Education Studies, Claremont Graduate School

This study examines whether teachers involved in a professional development program designed to expose them to cultural and linguistic information about African American students are able to translate this knowledge into appropriate pedagogy. Researchers will document how teachers at various stages of the process incorporate this knowledge into curricular, instructional, and pedagogical practices, and how the changed practice of teachers affects the academic achievement of African American students. For more information, contact Michele Foster (510-787-1972 or fostermi@cgs.edu) or Cynthia Lopez Elwell (909-621-8105).

Program 5 Integrated Reform

Program Directors Yolanda N. Padrón and Samuel Stringfield

The integrated reform cluster includes projects involving the design, enactment, and evaluation of major multi-element educational programs, each of which has the potential for significant impact on local, state, tribal, and national policy. Each of these programs is based on a wealth of research data, pilot work, and the committed involvement of practitioners and community members. The projects examine how major reform efforts affect the education of several different groups of language minority and at-risk students, including those from Latino, Native American, African American, Hawaiian, and Appalachian backgrounds.

Project 5.1 **Estimating the Population of At-Risk Students Using Multiple Risk Indicators**

David Grissmer and Sheila Nataraj Kirby, RAND

This project is developing comprehensive composite indicators of risk and using them to estimate the number, location, and socioeconomic and racial/ethnic characteristics of students at risk of educational failure. In addition, the project will analyze how these estimates may change as the population becomes more diverse in the next decade. For more information, contact David Grissmer (202-296-5000 or david_grissmer@rand.org).

Project 5.2 **"Scaling Up:" Effects of Major National Restructuring Models in Diverse Communities of Students At Risk**

Sam Stringfield and Amanda Datnow, The Johns Hopkins University
Steven M. Ross and Lana McWilliam Smith, University of Memphis

This study examines classroom, school, and district conditions and actions necessary to ensure successful culture-sensitive reforms. Data will also be reported concerning the long-term effects of several leading school restructuring programs on culturally diverse student bodies and faculties of participating schools. The results will provide greater understanding of school restructuring in high poverty, multicultural, multilingual contexts. For more information, contact Sam Stringfield (410-516-8834 or sstringf@scov.csos.jhu.edu).

Project 5.3 **Tracking Untracking: Evaluating the Effectiveness of an Educational Innovation**

Hugh Mehan and Lea A. Hubbard, University of California, San Diego

This study is evaluating the effectiveness of programs that untrack low-achieving high school students by exposing them to a regular college-bound curriculum instead of the more limited curriculum offered by traditional compensatory education programs. The project is modeled on the Advancement Via Individual Determination (AVID) program in San Diego, which has been successful in assisting low-income ethnic and linguistic minority populations. For more information, contact Hugh Mehan or Lea Hubbard (619-534-1680 or bmehan@ucsd.edu or lhubbard@weber.ucsd.edu).

Project 5.4 **Improving Classroom Instruction and Student Learning For Resilient and Non-Resilient English Language Learners**

Yolanda N. Padrón, Shwu-yong L. Huang, and Hersholt C. Waxman, University of Houston, Clear Lake

This project examines individual attributes of learners, school and classroom factors, family factors, and out-of-school factors to help determine why some Latino English language learners have been successful in school, despite coming from similar socio-cultural contexts as their less successful classmates. Drawing from these findings, the researchers will develop an instructional intervention for improving the reading instruction of Latino English language learners. For more information, contact Yolanda Padrón (713-283-3584 or padron@uhcl4@cl.uh.edu).

Project 5.5 **Appalachian Children's Academic and Social Development in Nongraded Primary Schools: Model Programs for Children of Poverty**

Ellen McIntyre, Diane W. Kyle, and Ric A. Hovda, University of Louisville

This study examines the effects of child-centered nongraded primary programs on urban African American children and rural children of Appalachian descent in terms of academic and social development. The researchers are investigating the ways in which teachers deemed as high implementors of this model are responsive to the cultural and linguistic knowledge and needs of this population. For more information, contact Ellen McIntyre (502-852-0576 or e0mcin01@ulkyvm.louisville.edu).

Project 5.6 **The Sociocultural Context of Hawaiian Language Revival and Learning**

Lois A. Yamauchi, University of Hawaii

The Native Hawaiian Language Immersion Program of the State of Hawaii offers a unique opportunity for documenting the issues involved in native language revival and instruction. This project is evaluating the program, interviewing participants and

community members, and collecting products and other items in order to document this adventurous and controversial program from a full variety of sociocultural perspectives. For more information, contact William Greene (808-956-3866 or wgreene@hawaii.edu).

Project 5.7

School/Community Co-Constructed School Reform: Upscaling From Research to Practice in a Native American Community

Roland G. Tharp and Stephanie S. Dalton, University of California, Santa Cruz
Marilyn Riding-In Feathers, Georgia Epaloose, and Carlotta Bird, Zuni (NM) School District

Based on five years of previous work in determining effective instructional practices for Zuni students, this study is documenting the processes and effects of a district-wide school reform program based on that research. Major interventions include parent/teacher focus groups, a district-wide teacher evaluation program, a community-based curriculum, and introduction of bilingual instruction. For more information, contact Dan Youpa (408-459-3099 or youpa@cats.ucsc.edu).

Project 5.8

Series of Case Studies of Education Programs/Schools Serving Native Students

William Demmert, Western Washington University

This project is creating a national consortium of programs and schools that promote improved academic performance, citizenship, and traditional values in Native American schools. The project is creating regional networks that focus on improving schools and schooling and incorporate appropriate case-study findings into their own programs. These networks and the momentum created by this project will sustain tribal reform efforts over an extended period of time. For more information, contact Kimberly Caulfield (360-650-3723 or kimberly@wce.wwu.edu).

Program 6 Assessment

Program Director: Roland Tharp, Acting Director

Project 6.1

Assessment of Language-Minority Students

Lorrie Ann Shepard, University of Colorado, Boulder
National Center for Research on Evaluation, Standards, & Student Testing, University of California, Los Angeles

This project is bringing together experts in language acquisition, content teaching in bilingual classrooms, and assessment to frame and commence a research agenda for the assessment of language minority students. This collaborative effort will provide a new national agenda and impetus for reform in student evaluation and assessment. For more information, contact Lorrie Shepard (303-492-6937 or lorrie.shepard@colorado.edu).

Project 6.2

Alternative Assessments for Exceptional Linguistically and Culturally Diverse Students

Sybil Rose Kline, University of California, Santa Cruz

The innovative features of this project are the application of sociocultural theory to the practice of bilingual special education and the initiation of the "opportunity model" as a guiding framework for special education services. This model, which is based on

established Center principles, begins to construct a framework for equal educational opportunities for culturally and linguistically diverse students in special education. This project explores current assessment practices in the field of bilingual special education and investigates some possible alternatives to existing practices. Project activities include 1) a literature review and survey of practitioners, 2) research and development of alternative assessment instruments for cognitive, literacy, and language development, and 3) recommendations for a coordinated bilingual special education assessment team approach for implementing a socioculturally based model. For more information contact Sybil Kline at sybil@cats.ucsc.edu.

Appendix B

Partners in the Center for Research on Education, Diversity & Excellence

ARC Associates

Brown University

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Center for Research on Evaluation Standards and Student Testing (CRESST)

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Western Washington University

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